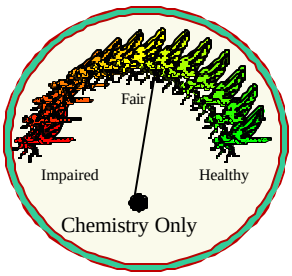


EcoSummary

Peacock Spring #1
at Peacock Springs
10/23/01



Background

Florida DEP's Division of Recreation and Parks selected Peacock Spring #1 at Peacock Springs, as well as several other springs from state parks, for biological and water quality monitoring. Data from these efforts will be used for documenting conditions within each park and for making resource protection decisions. Peacock Springs State Recreation Area is located in Suwannee County; see Figure 1. Peacock Spring #1 runs into the north side of the Suwannee River. Water quality characteristics vary from spring vent to spring vent, so a sampling location in the spring run was selected to document overall effects.

Samples were taken at Peacock Spring #1 in October 2001. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, color, turbidity, *Enterococci*, *Escherichia coli*, fecal coliform, and total coliform analysis; see Figure 2.

Results

Nitrate-nitrite concentrations (1.0 mg/L) at the sampling site were higher than those found in 95% of Florida streams; see Figure 2. Ammonia and total Kjeldahl nitrogen were below quantitation limit (see figure 2). Total phosphorus concentrations (0.03 mg/L) were in the good range, measuring lower than what is found in 90% of state streams. *Enterococci* and *E. coli* concentrations were below the EPA designed beach area guidelines (20 col/100mL and 14 col/100mL, respectively). Fecal and total coliform levels were below the Class III water body threshold values. Turbidity levels (1.8 NTU) were in the fair range, measuring lower than 60% of state streams. The periphyton community in Peacock Spring #1 was dominated by diatoms with some blue-green and green taxa. The particular taxa found were indicative of eutrophic conditions. In conclusion, although elevated nitrate-nitrite levels in Peacock Spring #1 may be associated with a relatively low-quality algal community, further sampling and testing is recommended in order to obtain a more thorough assessment of the overall health.

Figure 1: Overview Map of the Peacock Springs Area



Figure 2: Data Table

Peacock Spring #1 at Peacock Springs			
Sampling Date		10/23/2001	
Macroinvertibrate Parameters		**Periphyton Parameters**	
SCI	-	% Bacillariophyceae	75.15
SCI Evaluation	-	% Cyanophyceae	20.41
Number of Taxa	-	% Chlorophyceae	4.29
EPT Index	-	Dominant taxon	*Amphora*
FL Index	-	Percent Dominant taxon	16.86
% Dominant Taxon	-	**Physical-Chemical Data**	
% Diptera	-	Habitat Assessment	-
Total number of Chironomidae	-	Specific Conductivity (umhos/cm)	298
% Filter-Feeders	-	Dissolved Oxygen (mg/L)	7.8
Chemistry Data		pH (SU)	7.23
Ammonia (mg/L)	0.013 I	Temperature (deg C)	22.3
Nitrate-Nitrite (mg/L)	1	**Bacteria Parameters**	
TKN (mg/L)	0.2	*Enterococci* (col/100mL)	20 Q
Total Phosphorus (mg/L)	0.03 I	*Escherichia coli* (col/100mL)	12 Q
Color (PCU)	5 U	Fecal Coliforms (col/100 mL)	14 Q
Turbidity	1.8	Total Coliforms (col/100mL)	500 Q

"U"- Value Reported is the Minimum Detection Limit; "Q"- Sample Held Beyond Normal Holding Time;
"I"- Value Reported is Less Than the Minimum Quantitation Limit, and Greater Than or Equal to the Minimum

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